



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

SHOULD WE HAVE AN ANNUAL CENSUS OF AGRICULTURE AND MANUFACTURES?*

By O. P. AUSTIN,
Statistician, The National City Bank of New York.

The question should we have a more frequent census of agriculture and agricultural products should unquestionably, in my opinion, be answered in the affirmative. Whether the more explicit question, should we have an *annual* census of agriculture should be answered in the affirmative there might be a difference of opinion. At present we have a decennial census of population, mining, and forestry, and a quinquennial census of manufactures, and it seems to me that nobody can doubt the advisability of having a census of agriculture even more frequently than that of manufactures, while the ideal plan would of course be an annual census for agriculture since a large proportion of the agricultural productions to be enumerated are annual in their recurrence.

And there are special reasons just at this time for feeling that agriculture is entitled to very close attention statistically as well as otherwise. We have reached a stage in our agricultural production in which scientific farming is of the utmost importance. We who, until within a comparatively recent time, were looked upon as the world's great purveyor of foodstuffs and manufacturing material have suddenly found that we have little of foodstuffs to spare for the outside world, and that we are ourselves consuming an increasing percentage of our manufacturing material. In the decade ending with 1900 we exported 36 per cent. of our wheat, but from that time exports declined, and in the 13 years from 1900 to the beginning of the war, we exported but 19 per cent. of our product, and in several years but 12 per cent. With the pressing demands of the war, however, the share of our products exported immediately increased and for the entire war period is about 29 per cent. of the total product. This increase in the percentage of our crop exported has, however, been at the

*Address delivered before the American Statistical Association at the Aldine Club, New York, April 20, 1917.

expense of our consumers, as is seen in the unprecedentedly high prices which now prevail, and the public anxiety as to sufficiency of supply pending arrival of the new crop. It is thus especially important, now that our population has reached a point at which it consumes most of our agricultural supplies, to intensify the product wherever possible, and to require our farms to supply as large a production per acre as do the much older lands of Europe where the production per acre averages about double that with us. To do this we should have all the information possible thereon, and this should include much more frequent official records of production than we have at the present time.

I use this term "records of production" because I want to distinguish between our present *decennial record* of production and the *annual estimate* of production supplied by the Department of Agriculture. In doing so I desire to make it perfectly clear that my suggestions are not intended as in any sense a criticism of or reflection upon the methods of the Department of Agriculture. That department, in fact, is performing a valuable service in its estimates and statistics of production, which it issues annually in certain lines, and from month to month during the crop year. But the facilities with which it operates and is compelled under present conditions to operate, and the limited appropriations which it has for performing that service cannot compare with those of a census, nor can anybody expect that the results will equal those of a census with a large corps of salaried enumerators covering the entire country in much greater detail than is possible by the Department of Agriculture under its present system of estimates by voluntary reports. In proof of this assertion it is only necessary to compare the methods of the two organizations of the Department of Agriculture, and the Census Bureau as stated by those respective organizations.

In the latest issue of the Monthly Crop Report, published by the Department of Agriculture, I find a detailed statement of the method by which the department collects the material upon which it bases its crop reports and estimates. Whether or not this statement was published at this particular moment with the purpose of supplying definite information for this

particular occasion, it at least does come to us at an opportune moment. It says:

The crop reports of the Department of Agriculture are not based upon actual enumeration of the total acreage planted of the different crops throughout the country, but are estimates, the accuracy of which rests upon the assumption that the average crop conditions existing at 50,000 separate points including every agricultural county of the United States, will be substantially the same as the conditions for all of the land under cultivation in this country. In other words, the government reports rest upon the scientific basis of the law of average. Therefore it is not necessary that voluntary crop reporters should report for an absolute area, rather it is important that they should give figures for that section only with which they are personally familiar by their personal observations and conversations with dependable neighbors. If each reporter will report accurately for his own neighborhood, the average for the state cannot fail to be almost absolutely correct. While the township is the ideal unit for reporting, these township reporters should not feel bound to report for the entire area embraced in the township, because experience shows that on the average the conditions existing in that part of the township under his immediate observation will faithfully reflect the condition over the entire township. County reporters are expected to report for the county as a whole upon practically the same principle, their reports being based upon their personal observations, reinforced by reports to them from different portions of the county. The average obtained from the reports from different sources, township reporters, county reporters, state field agents, and special lists of reports, are usually in exceedingly close agreement, and for important crops rarely varying more than 5 between the highest and the lowest figure.

Here we have a definite statement from the Department of Agriculture of the method by which it prepares the estimates of crop and other conditions, and it is only fair in considering this question of whether we should have more frequent census reports of agriculture to contrast the system of the Department of Agriculture with that of the Census Bureau. To do this I quote to you from the 1910 Report of the Census of Agriculture, the method by which its statistics were compiled. First, the law providing for the census of agriculture required that schedules relating to agriculture should include the name of the occupant of each farm, and among other requirements,

the value of live stock, the acreage of crops planted during the year of the enumeration, and the quantity and value of crops and other farm products in the year next preceding the enumeration. Each census supervisor was directed to employ suitable persons as enumerators who were respectively required to "visit personally each dwelling house in his division and each family therein, and by inquiry made of the head of each family, or of the member thereof deemed most competent and most trustworthy, obtain each and every item of information required by this act, and in case no person shall be found at the usual place of abode of such family competent to answer the inquiries, then the enumerator shall obtain the required information as nearly as may be practicable from families or persons living in the neighborhood of such place of abode."

It will be seen from this extract from the law that enumerators carry a uniform schedule to *every farm in the United States*, and obtain from the occupant of the farm, or if this is not possible, from others best equipped to supply the information, the data upon which the census report of production was made. The Department of Agriculture statement just read to you states that its estimates are based upon the opinion of 50,000 voluntary reporters. The census states that 5,795,000 farmers reported upon the schedules placed before them by the census enumerators, and while it seems reasonable to assume that the judgment of 50,000 Department of Agriculture reporters was good, it would appear that the judgment of the 5,795,000 farmers who actually produced the grain and live stock reported upon would be materially better in shaping up measurements or estimates of production.

That there is a marked discrepancy between the Department of Agriculture estimates, and the census count, will be evident from a comparison of a few of the statements of these two organizations relating to production in census years. In 1879 the Department of Agriculture figures as published by the Statistical Abstract of the United States, estimated the corn crop of the country 181,000,000 bushels below the census count for that year. In 1899 its wheat figures were 112,000,000 bushels below those of the census, and those of corn were 588,000,000 lower than those of the census. In 1909 its corn

figures were 220,000,000 bushels higher than those of the census, and its wheat figures, 54,000,000 above the census record. In the estimates of live stock there were greater discrepancies, supposed to be due in some degree to the fact that the census figures related to a different period of the year than those of the department, and included many young animals not in existence at the date of the department estimate as of January 1. The Agricultural Department, however, seems, after years of wide differences in the two reports to have concluded to give closer recognition to the census figures for in its published estimates of farm animals the figures of 1901, the year following the census of 1900 show a sudden and enormous increase, and are accompanied by a statement that "in estimates of 1901 and subsequent years due weight has been given to the figures of the census." The "weight" given to the census figures must have been very appreciable, since its estimates of cattle in 1901 are 42 per cent. greater than those of 1900, sheep 44 increase, swine 53, mules 37, and horses 22 per cent. greater in the 1901 figures than those of 1900, while the estimated value of all farm animals in 1901 was 36 per cent. greater than for 1900. By 1910, however, the department estimates seemed to have again required readjustment, for its 1911 figures showed a sudden increase of 39 per cent. in the estimated number of swine as compared with the year immediately preceding, while the group "oxen and other cattle" showed a reduction of 16 per cent. And all of these great changes it must be remembered occurred in the year immediately following that in which the census figures became available.

I am not making these comparisons with the purpose of criticising the figures of the Department of Agriculture, to which we are all under obligations for the results of the system by which it obtains with much greater frequency than the census the individual opinions of such a large force of observers in every part of the country, a service in which it produces prompt and valuable results, but I am only attempting to emphasize the fact that Congress is neglecting a duty to the great agricultural as well as economic interests of the country in omitting to require its great counting machine,

the Census Bureau, to apply from year to year to this most important of our industries the systematic and detailed study which it now applies only once in ten years.

Our manufacturing industry is at this time also very much in need of an additional service from the Census Bureau. For many years the decennial census of manufactures served a fairly satisfactory purpose, but with the rapid increase in manufacturing in the United States, and the equally rapid growth in the exportation of manufactures, there came a time when a more frequent census of manufactures was demanded by those engaged in that industry, whether as relates to capital, management, or employment. As a consequence, we have had since 1900 quinquennial censuses of manufactures, whereas prior to 1900 they were but decennial. And the time has now come, in my opinion, when the censuses of manufactures should be even more frequent. Down to 1900 the natural products, foodstuffs, and manufacturing material formed about two thirds of our exports, which had only just crossed the \$1,000,000,000 line. As we entered the twentieth century there came a sharp change in the character of our exports; foodstuffs fell off amazingly, so that they formed in the year before the war only 18 per cent. of the total against 40 per cent. in 1900 and 56 per cent. in 1880. Conversely, manufactures, which formed in 1880 but 15 per cent. of the total exports were in 1900 35 per cent. and in 1913 practically 50 per cent. while since the beginning of the war, they have formed a much larger proportion, being 66 per cent. in 1916. It is perfectly apparent that we shall have in future, when conditions after the war return to normal, very little of foodstuffs to spare to the outside world, and that we are ourselves consuming an increasing proportion of the one class of manufacturing material which we have to sell, namely, cotton. All of this means that our future reliance for the growth of our exports must be manufactures. They have grown in the export trade, including in this figure finished manufactures and those for further use in manufacturing, from \$180,000,000 in 1890 to \$485,000,000 in 1900, \$767,000,000 in 1910, and \$1,185,000,000 in 1913, while with the abnormal demands of the world upon us, they grew to over \$3,500,000,000 in the calendar year 1916, having

thus been in the calendar year 1916 more than three times as much as in the fiscal year 1913.

This growth in exportation of manufactures from \$180,000,000 in 1890 to \$1,185,000,000 in 1913 was normal, and while the enormous growth from 1913 to the end of the calendar year 1916 was of course abnormal, it does illustrate the possibilities of our manufacturers in producing for foreign markets, and suggests that they may be able in the future to assume the responsibility of maintaining the rate of growth in our total exports which occurred chiefly in foodstuffs during the earlier period in our history. And have we not good reason to believe from the lessons of the last three years that our manufactures are capable of assuming this new responsibility of increasing their share in the growth of our export trade? Without a very rapid growth in exports of manufactures our rank as an exporting nation must decline. And it seems to me that we may properly assume that a manufacturing industry which could under normal conditions increase its exports from \$180,000,000 in 1890 to \$1,185,000,000 in 1913, and follow this with the enormous increase which we have witnessed during the war period, may be relied upon to assume the responsibility for a continuation of the growth of our entire exporting trade despite the fact that exports of foodstuffs must decline in the immediate future.

To enable the manufacturing industries to assume this new duty, we owe it to them, in my opinion, to give them much more frequent official information regarding the manufacturing activities of the entire country. Each recurring census shows to each manufacturer of the entire country the amount of capital invested, the number of workmen employed, the amount of material purchased, and the value of output in the line or lines of industry in which he is individually engaged. That this information must be of great value to every manufacturer in broad studies of the development of the manufacturing industry, and especially his own particular line, goes without saying, and if such information is valuable to him when it comes on decennial or quinquennial occasions, how much more valuable would it be if he could have it annually?

I do not mean by this that we should take an annual census

of manufactures in the very great detail in which the quinquennial census is now made, but for a limited number of lines, those which form the large proportion of the output of our great manufacturing industry, an annual census could be taken at a comparatively small cost, and if in selecting these industries special attention were given to those in which we desire to increase our sales abroad it would prove of very great service to our export trade and to our manufacturing industry as a whole.